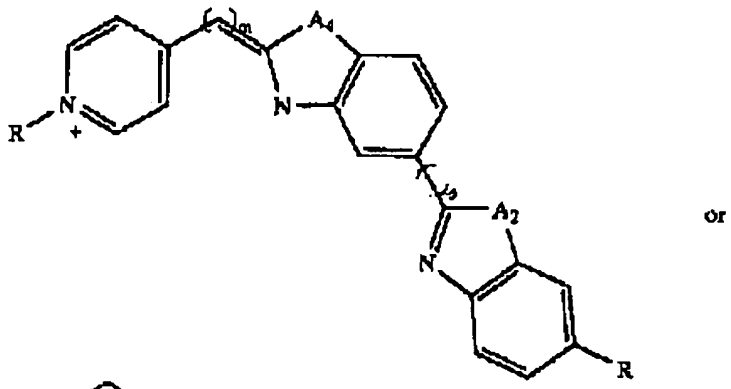
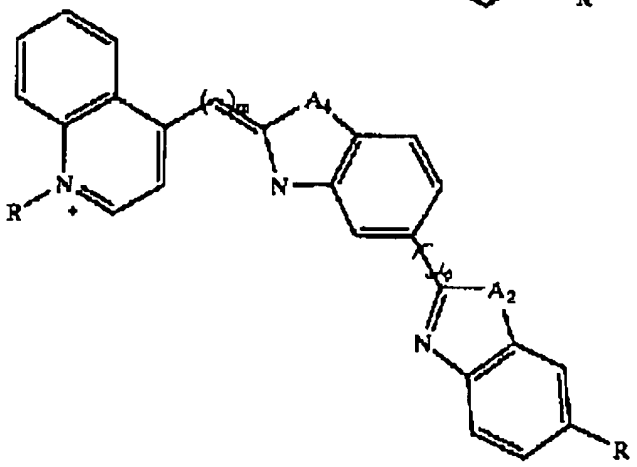
AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A cyanine dye having the formula:



or



wherein A_1 and A_2 are each independently O, S or N, and R is H or a ~~carbohydrate~~ hydrocarbon, optionally containing a heteroatom, and m is an integer from 0 to 5, and n is an integer from 0 to 5.

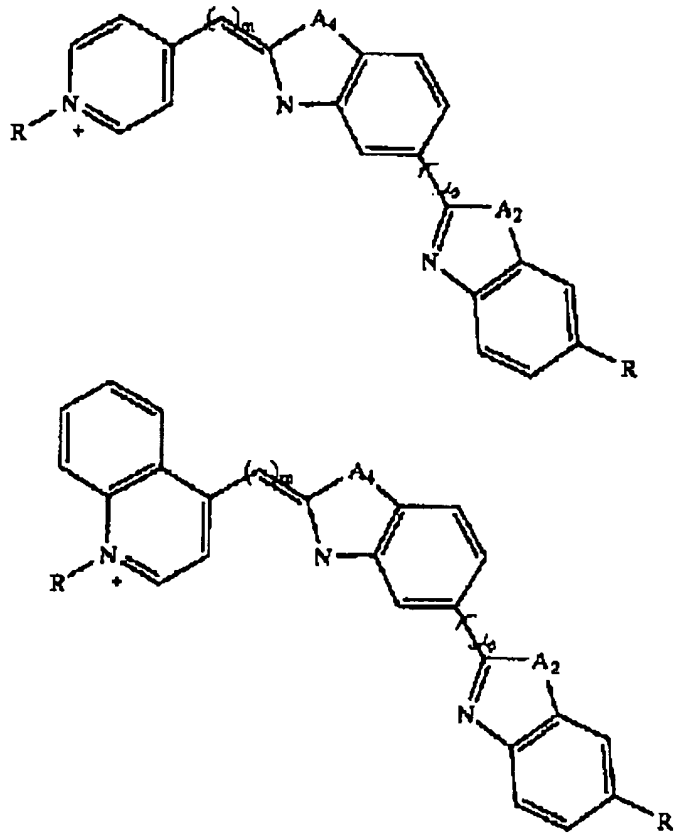
2. (Original) The cyanine dye of claim 1, wherein R is methyl or ethyl, and m is 1 and n is 0.

3. (Original) The cyanine dye of claim 1, wherein R is methyl or ethyl, m is 1 and n is 0, and A_1 and A_2 are S.

4. (Original) The cyanine dye of claim 1, wherein R is methyl or ethyl, m is 1 and n is 0, and A_1 and A_2 are O.

5. (Original)The cyanine dye of claim 1, wherein R is methyl or ethyl, m is 1 and n is 0, A_1 is S and A_2 is O.

6. (Currently Amended) A hybridization probe comprising a sequence-recognizing nucleic acid portion and a reporter portion, wherein the reporter portion comprises a cyanine dye having the formula:



or

wherein A_1 and A_2 are each independently O, S or N, and R is H or a ~~carbohydrate~~ hydrocarbon, optionally containing a heteroatom, and m is an integer from 0 to 5, and n is an integer from 0 to 5.

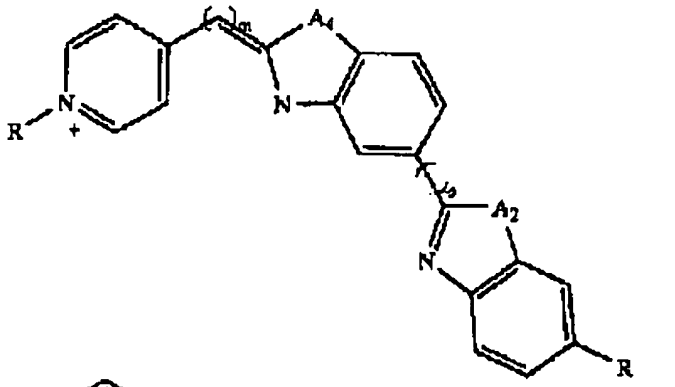
7. (Original) The probe of claim 6, wherein R is methyl or ethyl, and m is 1 and n is 0.

8. (Original) The probe of claim 6, wherein R is methyl or ethyl, m is 1 and n is 0, and A_1 and A_2 are S.

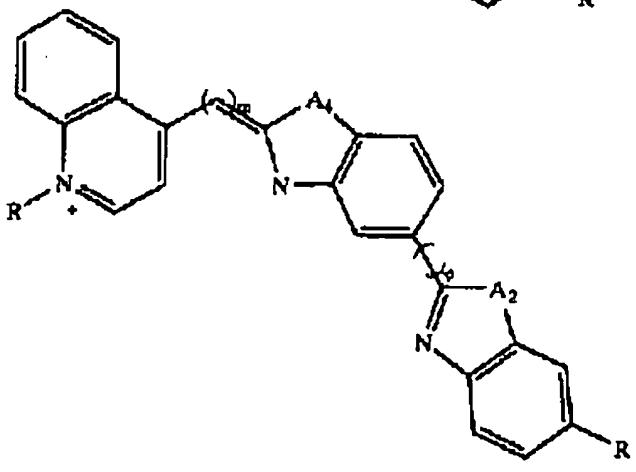
9. (Original) The probe of claim 6, wherein R is methyl or ethyl, m is 1 and n is 0, and A_1 and A_2 are O.

10. (Original) The probe of claim 6, wherein R is methyl or ethyl, m is 1 and n is 0, A_1 is S and A_2 is O.

11. (Currently Amended) A method for detecting the presence of double-stranded DNA in a sample comprising the steps of: introducing into the sample a cyanine dye having the formula:



or



wherein A_1 and A_2 are each independently O, S or N, and R is H or a ~~carbohydrate~~ hydrocarbon, optionally containing a heteroatom, and m is an integer from 0 to 5, and n is an integer from 0 to 5; and detecting fluorescence from the cyanine dye, wherein the fluorescence intensity from the cyanine dye is increased in the presence of double-stranded DNA as a result of binding of the cyanine dye in the minor groove of the double-stranded DNA.

12. (Original) The method of claim 11, wherein R is methyl or ethyl, and m is 1 and n is 0.

13. (Original) The method of claim 11, wherein R is methyl or ethyl, m is 1 and n is 0, and A_1 and A_2 are S.

14. (Original) The method of claim 11, wherein R is methyl or ethyl, m is 1 and n is 0, and A_1 and A_2 are O.

15. (Original) The method of claim 11, wherein R is methyl or ethyl, m is 1 and n is 0, A_1 is S and A_2 is O.

16. (Withdrawn) A method for monitoring a real time PCR reaction by detection of the formation of double-stranded DNA, comprising the steps of performing real time PCR in the presence of a fluorescent dye that interacts with double-stranded DNA, and monitoring

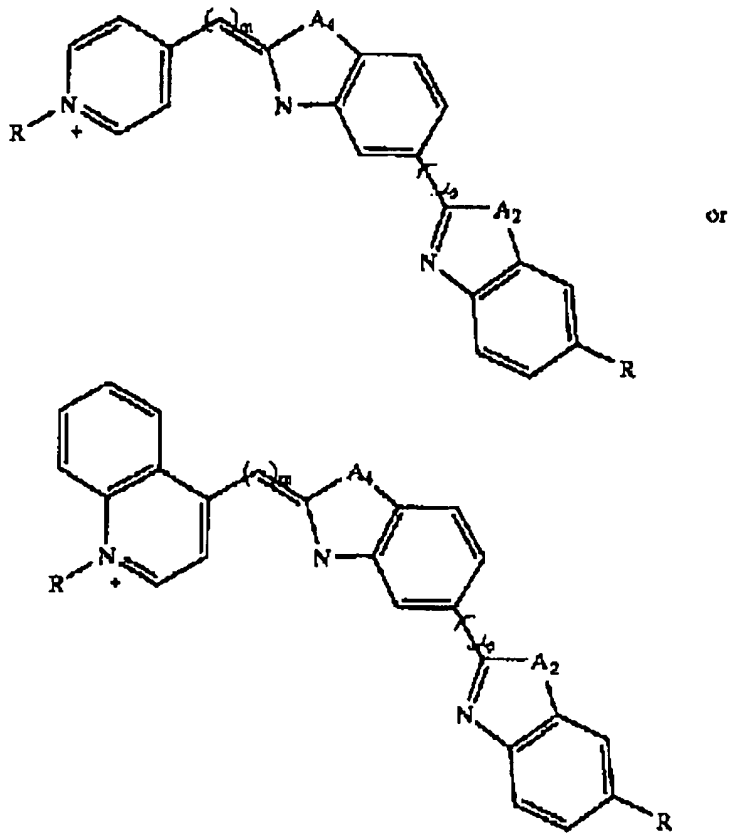
fluorescence from the fluorescent dye, wherein the fluorescent dye increases its fluorescent intensity when it is locked in a minor groove position in double stranded DNA, and wherein the dye comprises at least 2 aromatic ring systems both comprising at least one nitrogen atom, which rings are linked by a alkyne group having up to four carbon atoms to form a conjugated bond, and the dye further comprises at least a third aromatic system linked thereto via a bond having a significant double string character, such as a single bond or a ethyne bond, to provide a stiff conjugated system.

17. (Withdrawn) The method of claim 16, wherein the dye is an asymmetric cyanine dye comprising two different cyanine residues.

18. (Withdrawn) The method of claim 16, wherein one of the cyanine residues contains S or O as a heteroatom.

19. (Withdrawn) The method of claim 16, wherein the dye compound is crescent shaped.

20. (Withdrawn, Currently Amended) The method of claim 16, wherein the cyanine dye has the formula:



or

wherein A_1 and A_2 are each independently O, S or N, and R is H or a ~~carbohydrate~~ hydrocarbon, optionally containing a heteroatom, and m is an integer from 0 to 5, and n to an integer from 0 to 5.

21. (Original) The method of claim 20, wherein R is methyl or ethyl, and m is 1 and n is 0.

22. (Original) The method of claim 20, wherein R is methyl or ethyl, m is 1 and n is 0, and A_1 and A_2 are S.

23. (Original) The method of claim 20, wherein R is methyl or ethyl, m is 1 and n is 0, and A_1 and A_2 are O.

24. (Original) The method of claim 20, wherein R is methyl or ethyl, m is 1 and n is 0, A_1 is S and A_2 is O.